



Statement of Basis

**for the Modification of the Waste Treatment and Immobilization Plant
Modification of the Hanford Facility Resource Conservation and Recovery
Act Permit**

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STATEMENT OF BASIS FOR MODIFICATION OF
THE DANGEROUS WASTE PORTION OF THE
RESOURCE CONSERVATION AND RECOVERY ACT PERMIT
FOR THE TREATMENT, STORAGE, AND DISPOSAL
OF DANGEROUS WASTE, PART III, CHAPTER 10 (WA7890008967),
WASTE TREATMENT AND IMMOBILIZATION PLANT

Publication Number 02-05-022

Permittees

United States Department of Energy
(Owner/Operator)
Office of River Protection/Richland Operations Office
P.O. Box 550
Richland, Washington 99352

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Richland, Washington 99352

This Statement of Basis has been developed by the Washington State Department of Ecology (Ecology) in accordance with the requirements of Washington Administrative Code (WAC) 173-303-840(2)(f)(iv). Its purpose is to present information on Ecology's tentative decision to modify Part III, Chapter 10, Waste Treatment and Immobilization Plant (WTP) of the Hanford Facility's Dangerous Waste Portion of the Resource Conservation and Recovery Act (RCRA) Permit for the Treatment, Storage, and Disposal (TSD) of Dangerous Waste, hereafter called "the Permit". This modification includes supporting technical information and engineering drawings for construction on the regulated portions of the WTP Pretreatment Building. Pursuant to WAC 173-303-830(3), only the conditions that are subject to this modification are reopened for comment.

Because of the low-level of public interest shown in the September 25, 2002, major permit modification, which incorporated the WTP into the Permit as a TSD Unit, Ecology has elected to prepare a Statement of Basis pursuant to WAC 173-303-840(2)(f)(iv) rather than a Fact Sheet. This process will be followed for permit modifications initiated by Ecology to incorporate similar design package information and other changes to the WTP Permit conditions. The September 25, 2002, Fact Sheet is available from Ecology upon request (Ecology Publication Number 01-05-006).

This Statement of Basis is divided into four sections, which include:

- 1.0 Hanford Facility Permit Background
- 2.0 The WTP Permitting Process
- 3.0 Procedures for Reaching a Final Decision on the Draft Permit
- 4.0 Proposed Modifications to the Hanford Facility Permit

1.0 Hanford Facility Permit Background

Ecology issued the Permit for the Hanford Facility in 1994. The Permit provides standard and general facility conditions, as well as, unit-specific conditions for the operation, closure, and post-closure of mixed and dangerous waste TSD units at Hanford.

The Permit is normally modified annually to incorporate newly permitted units, reflect Class 1/2/3 Modifications, and include minor changes in grammar, consistency, and presentation. The Washington State Dangerous Waste Regulations in WAC 173-303-830 describe the types of changes or modifications that may be made to a dangerous waste permit issued by Ecology.

Approximately 50 TSD units at Hanford are operating or closing under RCRA interim or final status standards.

Conditions of the Permit are presented in six parts:

- Standard Conditions (Part I)
- General Facility Conditions (Part II)
- Unit-Specific Conditions for Final Status Operations (Part III)
- Corrective Action for Past Practices (Part IV)
- Unit-Specific Conditions for Units Undergoing Closure (Part V)
- Unit-Specific Conditions for Units in Post-Closure (Part VI)

As noted above, the WTP TSD Unit was added to the Unit-Specific Conditions for Final Status Operations (Part III) portion of the Permit on September 25, 2002. The permit modification was effective on October 25, 2002. The WTP Unit is currently being constructed under final status standards.

2.0 The WTP Permitting Process

The permitting of the WTP Unit is using a phased (or stepped) approach. The first phase was completed on September 25, 2002, with issuance of a final permit for beginning construction of the WTP Unit Low Activity Waste (LAW) and High Level Waste (HLW) buildings and a compliance schedule to provide additional detailed information to Ecology. The compliance schedule addresses submittal of information necessary for construction of the rest of the WTP Unit, and eventual operation. The second phase of permitting is implementation of the compliance schedule, which requires design and other information be submitted before regulated portions of the WTP Unit are constructed. The third phase of permitting is implementation of the last portion of the compliance schedule, which requires updating portions of the Dangerous Waste Permit Application that were incorporated into the final Permit. These portions of the Permit are more administrative in nature, and can not be completed before the design is nearly complete (e.g., Contingency Plan, Closure Plan, Training Plan). It is anticipated that at the completion of these three phases, the WTP Unit will be in compliance with all the relevant requirements of WAC 173-303, and after receiving written permission from Ecology, can begin storage or treatment of dangerous and/or mixed waste. For more details on the WTP permitting process, see the September 25, 2002, Fact Sheet (Ecology Publication Number 01-05-006).

The design submittals (second phase described above) have been structured to allow the Permittees to provide design information in roughly the same order as the buildings are constructed. Therefore, the packages start at the lowest level of the building (i.e., below grade levels) and are submitted for regulated areas of each level of the building before construction begins.

The Permit breaks out design packages into three general groups by the type of regulated equipment: (1) secondary containment; (2) primary containment (e.g., tanks, miscellaneous units [i.e. evaporators and melters], containment buildings); and (3) other associated, regulated equipment (e.g., ancillary equipment, equipment associated with miscellaneous units). Using tank systems as an example, secondary containment packages include details of the design of secondary containment that must be in place in regulated areas when the floors and walls are built for that level of the building (e.g., floor slope, sump location). Construction of the floors and walls is usually followed by the installation of tanks and other large equipment. Therefore, a tank package on that level will be included in the Permit before installation (e.g., structural details for those tanks or miscellaneous units showing riser locations, unit volumes, tank shell thickness). The last equipment usually installed on a level for a tank system is the ancillary equipment (e.g., piping, pumps, process instrumentation, electrical equipment). Therefore, the ancillary equipment package that provides details for equipment on that level will be included in the Permit before installation (e.g., materials of construction, pipe support details, pump types and their operating limits).

With each WTP Building consisting of multiple levels, the total number of design packages is large. The Permittees estimate about 120 packages will have to be incorporated into the Permit. This could potentially trigger 120 public comment periods. In reality, Ecology intends to group packages, where possible, to reduce the potential number of public comment periods.

The secondary containment, primary containment, and other associated, regulated equipment packages for different levels require repetitive information submittals in each package. Again, using tank systems as an example, the method of installation of secondary containment liners on each level is expected to be the same and most tanks will use the same construction specifications. The Permit allows the Permittees to reference the previously submitted design information. Therefore, some design packages may consist mostly of references to information previously provided.

Ecology is authorized pursuant to WAC 173-303-830(4)(e) to grant temporary authorizations for the Permittees to start construction on a design package after Ecology approval, but before the draft permit modification process is complete. A Permittee is allowed to request a temporary authorization to implement a modification prior to public notice and comment, pursuant to WAC 173-303-830(4)(e)(ii)(A). To issue a temporary authorization, Ecology must find it meets the criteria as described in WAC 173-303-830(4)(ii)(A) and -830(4)(iii). The term of a temporary authorization is limited to 180 days with the potential for Ecology approval of two terms, with a maximum combined duration of 360 days. The purpose of a temporary authorization is to allow the timely implementation of a permit modification. Construction that takes place under a temporary authorization is at the Permittees' risk because public comment may require the Permittees to modify something that is already built.

Ecology issued a 180-day temporary authorization for the PTF-001 design package on October 31, 2002. Ecology is not expecting to issue temporary authorizations for all packages. The submittal schedule developed by the Permittees will allow most design packages to undergo public comment and be incorporated into the Permit prior to construction of those areas.

3.0 Procedures for Reaching a Final Decision on the Draft Permit

This Washington State Hazardous Waste Management Act, Chapter 70.105 Revised Code of Washington (RCW), and regulations promulgated in Chapter 173-303 of the WAC, regulate the management of dangerous waste in Washington. In accordance with WAC 173-303-800, facilities that treat, store, and/or dispose of dangerous waste must obtain a permit for these activities.

A 45-day public comment period for draft permit modifications to Part III, Chapter 10, WTP, of the Permit begins on December 16, 2002, and ends on January 31, 2002. All comments received during the public comment period will be considered and responded to before final decisions are made on the proposed modifications. Regulatory requirements for public notice and involvement (for this permit modification) are described in WAC 173-303-840(3). Comments must be post-marked or received by e-mail no later than January 31, 2002. Comments hand delivered by January 31, 2002, to the address below also will be accepted. Direct all written comments to:

Mr. Steve Skurla
Department of Ecology
1315 W. 4th Avenue
Kennewick, Washington 99336
E-mail address: ssku461@ecy.wa.gov

A public hearing will be held at the Department of Ecology, (address shown above), if requested.

Ecology will consider and respond to all written comments submitted by the deadline, and verbal comments submitted at the public meeting, if held. Ecology will then make a final permit decision, which will become effective 30 days after Ecology provides notice of the decision to the Permittees and all who commented. If Ecology's decision includes substantial changes to the Permit because of public comment, Ecology will initiate a new public comment period.

All commenters and the Permittees shall receive a copy of the Responsiveness Summary and a notification of the final permit decision. Ecology's final permit decision may be appealed within 30 days after notice of the final permit decision has been provided.

Copies of the Permit for the Hanford Facility, including the proposed, draft permit modifications are available for review at the Hanford Public Information Repositories listed below. [For additional information, call the Hanford Cleanup Hotline toll-free at (800) 321-2008].

HANFORD PUBLIC INFORMATION REPOSITORIES

Portland

Portland State University
Branford Price Miller Library
934 SW Harrison and Park
Portland, Oregon 97207
(503) 725-3690
Attn: Michael Bowman/Jocelyn Kramer
E-mail: bowman@lib.pdx.edu

Spokane

Gonzaga University
Foley Center
East 502 Boone
Spokane, Washington 99258-0001
(509) 323-3839
Attn: Connie Scarppelli
E-mail: carter@its.gonzaga.edu

Richland

Public Reading Room
2770 University Drive
Consolidated Information Center, Rm. 101L
Richland, Washington 99352
(509) 372-7443
Attn: Terri Traub
E-mail: reading_room@pnl.gov

Seattle

University of Washington Suzzallo Library
Government Publication Division
Seattle, Washington 98195
(206) 543-4664
Attn: Eleanor Chase
E-mail: echase@u.washington.edu
Public Service: (206) 543-1937

This Statement of Basis and proposed draft permit modification are also available on the World Wide Web at <http://www.ecy.wa.gov/programs/nwp/>.

If special accommodations are needed for public comment, please contact Tim Hill, Department of Ecology, Nuclear Waste Program, at (509) 736-3026 (voice) or (360) 407-6006 (TDD).

4.0 Proposed Permit Modification to Part III, Chapter 10, WTP of the Permit

Proposed Draft Permit Modification to Part III, Chapter 10, WTP of the Permit includes:

- Inclusion of design package PTF-001 into the Permit (Pretreatment Building, -45 and -21 feet elevations; secondary containment and walls to grade);
- Clarification of leak detection system submittals and correction of minor errors in permit conditions.

4.1 Supplemental Design Information

The Table 1 lists the design information included in this draft permit modification and where in the Permit the information is proposed to be located. At final issuance of the permit modification, Ecology will specify where each drawing or report resides in the Permit. The complete information included in the permit modification will be stored in the Administrative Record. Duplicate sets of drawings will not be issued to the Permittees at issuance of the permit modification in order to minimize the amount of duplicate paperwork, unless drawing changes are made as a result of public comment. The letter issuing the modification will specify drawing numbers and locations.

4.2 Other Changes Included in This Modification

As the Permit for the WTP Unit is implemented, Ecology will modify the permit conditions for many reasons including: to clarify text, add new conditions, delete existing conditions, or to correct errors. To communicate the changes in the draft review package, the draft permit modification will include page changes showing all significant draft changes to the Permit. The text to be deleted will be struck-out with a single line and the new text will be double-underlined. At issuance of the final permit modification, clean page changes will be issued to the Permittees and Administrative Record.

In this draft permit modification, a number of changes are being proposed for inclusion in Part III, Chapter 10, WTP, of the Permit. The most significant change is the clarification regarding the submittal of information for leak detection system monitoring and instrumentation. The existing secondary containment

permit conditions address leak detection systems, but do not specifically call out submittal of this important information. The changes to the permit conditions and tables attempt to clarify this requirement. For consistency, Ecology has chosen to locate the additional leak detection system permit conditions in the secondary containment portions for each unit (i.e., tanks, miscellaneous units, containment buildings) along with existing leak detection system conditions. Installation of the leak detection system monitoring and instrumentation will not be authorized until, in the case of a temporary authorization, Ecology has reviewed and approved the information, and in the case of a permit modification, until the information is incorporated into the final Permit. This change affects all portions of the Permit in which secondary containment leak detection system requirements are present. As a result of including leak detection system information in the draft Permit, the following draft changes are being proposed:

1. The following Permit Conditions were modified to also apply to leak detection system monitoring and/or instrumentation: III.10.C.5.c.iv., III.10.E.5.b., III.10.E.9.e.ix., III.10.E.9.e.xi., III.10.G.5.b., III.10.G.10.e.x., III.10.G.10.e.xii., III.10.H.1.a.xiv., III.10.H.5.e.ix., III.10.H.5.f.xvi., III.10.I.1.a.viii., III.10.J.1.a.xiv., III.10.J.5.e.ix., III.10.J.5.f.xvi., and III.10.K.1.a.viii.
2. The following Permit Conditions were added to address submittal of information for leak detection systems: III.10.E.9.b.x. through xiii., III.10.F.3.e., III.10.F.7.c.ix. through xii., III.10.F.7.d.v. through vi., III.10.G.10.b.x. through xiii., III.10.H.5.b.x. through xiii., and III.10.J.5.b.x. through xiii.
3. The following Permit Conditions were modified to reference additional leak detection conditions: III.10.E.5.b., III.10.E.9.b.i., III.10.E.9.e.xi.F., III.10.G.5.b., III.10.G.10.b., III.10.H.1.a.xiv., III.10.H.5.b.i., III.10.I.1.a.viii., III.10.J.1.a.xiv., III.10.J.5.b.i., and III.10.K.1.a.viii.
4. The 'Leak Detection Type' column was removed from the following Permit Tables: III.10.E.I through P, III.10.F.B and C, III.10.G.B, III.10.H.B, III.10.I.B, III.10.J.B, and III.10.K.B. The required submittal of this information was added to the following Permit Tables: III.10.E.E through H, III.10.G.C, III.10.H.C, III.10.I.C, III.10.J.C, and III.10.K.C.
5. Permit Condition III.10.E.e.xiii.E. was removed. This information is no longer being requested in the referenced Permit Tables (see Draft Change No. 6).
6. Permit Table III.10.F.D was added to address submittal of information for leak detection system monitoring and instrumentation, including type of leak detection instrument (see Draft Change No. 6).

In addition, to correct minor errors in the Permit, the following draft changes are being proposed:

1. The list of acronyms was updated in Section III.10.C.1.
2. Incorporating sump data provided in the design package resulted in additions and changes to Tables III.10.E.J and III.10.E.E.
3. Permit Condition III.10.E.2.b. was corrected to include Primary Sump Tables III.10.E.I, K, M, and O.
4. Appendix references for Permit Conditions III.10.E.5.b., III.10.G.5.b., III.10.H.1.a.xiv., III.10.I.1.a.viii., III.10.J.1.a.xiv., and III.10.K.1.a.viii. were corrected.
5. Regulatory citations for Permit Conditions III.10.E.9.c.vi. and III.10.E.9.d.vi. were corrected.
6. The format of Permit Tables III.10.E.J, L, N, and P was modified to reflect the table format of sump design information as submitted by the Permittees.
7. The 'PVV' (Process Vessel Vent) System was added to the 'Designation' column in Permit Table III.10.G.A.i.
8. Permit Condition III.10.H.5.e.ix. was corrected to include Permit Table III.10.I.C.
9. Permit Condition III.10.J.5.e.ix. was corrected to include Permit Table III.10.K.C.

Table 1 - Design Packages Submitted by Permittees

PACKAGE PTF-001 Pretreatment Building –45 and -19 Ft. Elevation Secondary Containment			
DOCUMENT/ DRAWING NUMBER	TITLE	REPLACES	PERMIT LOCATION
24590-CM-HC4-HXYG-00138-01-01, Rev C	IQRPE Independent Assessment Report	N/A	Appendix 8.11
24590-PTF-P1-P01T-P0006, Rev 1	General Arrangement Plans (PTF at –45 El)	N/A	Appendix 8.4
24590-PTF-P1-P01T-P0009, Rev 1	General Arrangement Sections	N/A	Appendix 8.4
24590-PTF-P1-P01T-P00012, Rev 0	General Arrangement Sections	N/A	Appendix 8.4
24590-PTF-P1-P01T-P0014, Rev 1	General Arrangement Sections	N/A	Appendix 8.4
24590-PTF-P1-P01T-P0015, Rev 1	General Arrangement Sections	N/A	Appendix 8.4
24590-PTF- PER-M-02-005, Rev 3	Flooding Volume Calculations for PT Facility	N/A	Appendix 8.8
24590-PTF- PER-CSA-02-001, Rev 0	Secondary Containment Design	N/A	Appendix 8.5
24590-PTF- PER-M-02-001, Rev 2	Material Selection for Building Secondary Containment/Leak Detection	N/A	Appendix 8.9
24590-PTF- PER-CON-02-001, Rev 0	Installation of Tank Systems	N/A	Appendix 8.12
24590-PTF- PER-J-02-001, Rev 1	Leak Detection-Sump Level Measurement in Secondary Containment Systems	N/A	Appendix 8.12
24590-PTF- PER-M-02-006, Rev 2	Sump Data for PTF Facility	N/A	Appendix 8.5
24590-WTP-RPT-PR-02-002, Rev A	Hydrogen Accumulation in Secondary Containment	N/A	N/A (Administrative Record)

NOTES:

PTF = Pretreatment Building

IQRPE = Independent, Qualified, Registered Professional Engineer